REMARKS

The Office Action of April 12, 2011 has been received and carefully considered. However, Applicant respectfully disagrees with the rejections. All claims are now present for examination and favorable reconsideration is respectfully requested in view of the previous amendments and the following comments.

REJECTIONS UNDER 35 U.S.C. §§102-103:

Claims 1, 3 and 17 have been rejected under 35 U.S.C. §102 (b) as allegedly being anticipated by Kubo et al. (US Pat. No. 5,298,200). Claim 16 has been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Kubo in view of Guerra et al. (US 5,677,371). Claims 9, 18 and 21 have been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Kubo in view of Yates (US 3,650,783) and Guerra et al. (US 5,677,371). Claim 22 has been rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Goodson (2003/0005860).

Applicant traverses the rejection and respectfully submits that the embodiments of present-claimed invention are not anticipated by Kubo or obvious over Kubo in view of Yates, Guerra or Goodson.

The examples of prior art references relate to the use of finely divided or colloidal silica together with diverse materials ***for the manufacture of cements***. They are not relevant as examples of prior art in the manufacture of metallurgical slurries.

The trivalent cations mentioned in Kubo are completely insolubilised and therefore incapable of destabilising silica or alumina sol binders. Indeed, ceramic shells using these materials in purified form are regularly used by the metallurgical industry, no tri-alkali metal phosphate additive being required in such cases. It would be completely superfluous to use such an additive with these minerals in purified form. The embodiment of the present invention refers to tri- or tetravalent ions whose condition is such that they

are capable of destabilising these binders. They are active even though sparingly soluble, the most common example being ferric hydroxide, formed by the oxidation of divalent iron on the surface of ferruginous minerals in the presence of water.

As pointed out in previous response, Kubo uses ammonium phosphate ***solely*** as a reactant with magnesium oxide or hydroxide, thereby forming an insoluble magnesium phosphate cement. The reason why tri-alkali metal phosphates are not stated in Kubo is quite simply that they do not perform in the required manner. Magnesium hydroxide is unable to displace the alkali metal ion and form magnesium phosphate under these conditions. Therefore, it would ***not at all*** be obvious to one skilled in the art of making slurries for metallurgical purposes to employ Kubo's procedure.

Under *KSR*, when determining whether a reference in a different field of endeavour may be used to support a case of obviousness (i.e. is analogous), it is necessary to consider the problem to be solved (see *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374 (Fed. Cir. 2007), as cited in Example 4.7 of PTO's *2010 KSR Guideline Update* of September 1, 2010).

In fact, Kubo's procedure would be dismissed ***immediately*** by anyone skilled in the art of making ceramic shells for metallurgical purposes. Thus is because the use of Kubo's composition for dental purposes requires that it sets quickly, whereas the use of silica sol based binders in the metallurgical industry requires that they are stable in slurry form for extended periods of time, which may be weeks or even months.

Goodson (2003/0005860) relates to a hodge-podge of materials, including tri- and tetravalent hydroxides. These materials destabilise silica sol binders immediately, i.e. within seconds, and are thus hardly suitable for the manufacture of stable silica sol based binder systems. It should be noted that Goodson (2003/0005860) uses finely divided silica powders as an alternative to silica sols. These are not suitable for use in metallurgical slurries. Furthermore, the role played by the diverse phosphates in claim 20

is, presumably, to provide free phosphoric acid by reaction with the stronger acids mentioned in claim 15.

Therefore, the pending claims are not anticipated by Kubo or obvious over Kubo in view of Yates, Guerra or Goodson. The rejection under 35 U.S.C. §§102-103 has been overcome. Accordingly, withdrawal of the rejections under 35 U.S.C. §§102-103 is respectfully requested.

Having overcome all outstanding grounds of rejection, the application is now in condition for allowance, and prompt action toward that end is respectfully solicited.

Respectfully submitted,

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